

FIREFLY REVIEWS

COLEOPTERORUM CATALOGUS SUPPLEMENTA. PARS 9 (EDITIO SECUNDA).
LAMPYRIDAE. By. F. A. McDermott, 149 pp., 1966. Dr. W. Junk, Publishers, The Hague, Netherlands. (Price US \$ 14.55)

Just how much was this new edition of the lampyrid catalogue needed? Ernest Olivier's first edition appeared in 1910 and McDermott's second edition cut-off date was the end of 1964. The first contained 1097 species and the second 1891 species. Thus, an astounding 42 percent of the presently known species were described in the last 55 years. The number of genera increased from 53 to 85, with 37 percent being described in 55 years. Add to those increases the many changes of status, combination, and nomenclature and anyone can see a definite need for a new list.

The catalogue follows the latest classifications. The genera are arranged in subfamilies, tribes, and subtribes. One subfamily, the Rhagophthalminae, is considered by some students to constitute a separate family. The drilids are not included; some workers would have made them a subfamily. A few new names necessitated by homonymies are proposed, and a few new combinations are introduced. Only three subspecies are recorded; that might be a record low for a beetle family of this size. The long list of references to biologies given in the first edition has been omitted, but many such references have been included under the individual species. It would seem that the lampyrids have gone the way of other experimental insects in that taxonomists can no longer be expected to include all references; so, references to luminosity and the structure of the luminous organs have been largely omitted.

This catalogue is up to the consistently high standards of previous Junk catalogues. Certainly Junk deserves much praise. So does Mr. McDermott; he worked very hard on this piece and did a fine job. But he is not here to read any words of just praise. He died on the day he received his copy of Pars 9. Not many men are so fortunate as to end a career with a magnum opus.

-- T. J. Spilman, U. S. Department of Agriculture, Washington, D. C.

STUDIES ON THE FLASH COMMUNICATION SYSTEM IN PHOTINUS FIREFLIES.

By James E. Lloyd, 95 pp., 1966. Misc. Publ. Mus. Zool. Univ. Michigan, no. 130.

The remarkable and unique phenomenon of flash communication among fireflies was partially worked out by H. S. Barber, to the disbelief of many of his colleagues of that day. Lloyd and John Buck both have shown Barber to be absolutely correct and each has gone on to quantify this work.

No student of biology can consider himself educated until he is familiar with Lloyd's recent work. This is as fascinating and as basic as Von Frisch's studies on bee communication. (One of the most enjoyable evenings I have spent in the field was with Lloyd last March when I saw him demonstrate firefly communication and aggressive mimicry.)

This publication contains the results of several seasons work involving about 25 species of Photinus. Students of this group will want to study these data in

detail. Others will benefit by a study of the author's methods and the treatment of the data gathered and discussed.

It should be noted that this work would not have been possible with Green's (1956) revision*. Lloyd would have had to name "patterns" and he would have been bogged down with names, literature, and specimens instead of doing the field work necessary to make these discoveries. This, I believe, is further proof of the benefits that will come about for biology as a whole as more and more groups are revised. -- R. H. Arnett, Jr.

*Green, J. W., 1956. Proc. California Acad. Sci., 28: 561-613, 19 figs.

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EPIZOIC SYMBIOSIS. By J. L. Gressitt, J. Aoki, and G. A. Samuelson, 1966. Pacific Insects, 8: 221-297. WEEVIL GENUS PANTORHYTES. By J. L. Gressitt, 1966. Pacific Insects, 8: 915-965.

Only a few cases of epizoic symbiosis have been recorded previous to these papers. The sudden discovery of many species of beetles showing such an interesting phenomenon can only arouse suspicion that symbiosis of this sort is more widespread than previously believed.

Two Papean weevil genera, Gymnopholus (Leptopiinae) and Pantorhytes (Brachyderinae), are recorded as supporting on their elytra or pronotum growths of algae, fungi, lichens, and liverworts in which live mites, nematodes, rotifers, diatoms, and other microorganisms. So far, only 16 of the 47 species of Gymnopholus and 10 of the 60 species of Pantorhytes are known to support these plants, but Gressitt suspects there are more.

With the exception of the new oribatid mite, Symbionbates papuensis Aoki, the animal life found in these plants is named only to phylum; the cryptogramic plants are determined to family. Descriptions of new species (33 of Gymnopholus and 31 of Pantorhytes) are accompanied by keys to all of the species of each genus. A list of additional species exhibiting epizoic symbiosis includes a few genera from three other weevil subfamilies (Cryptorhynchinae, Otiorhynchinae, and Baridinae) and also the colydiid, Dryptops phytophorus, which Samuelson describes as a new species.

In addition to the taxonomic value of this work, these articles will surely stimulate further interest in symbiotic relationships between insects and plants and other animals. -- Janice C. Foster, Purdue University.

WHITE GRUBS AND THEIR ALLIES; A STUDY OF NORTH AMERICAN SCARABAEOID LARVAE. By Paul O. Ritcher, 1966. Studies in Entomology no. 4. Oregon State University Press, 219 pp. \$ 10.00.

Students of the Scarabaeidae are very fortunate to have such a wealth of literature on their group. With the exception of the Cerambycidae, this family is probably the best known of the major families of North American beetles. There are, of course, several difficult groups that remain to be worked out, most of which are currently under study by one or more American Coleopterists. Out-